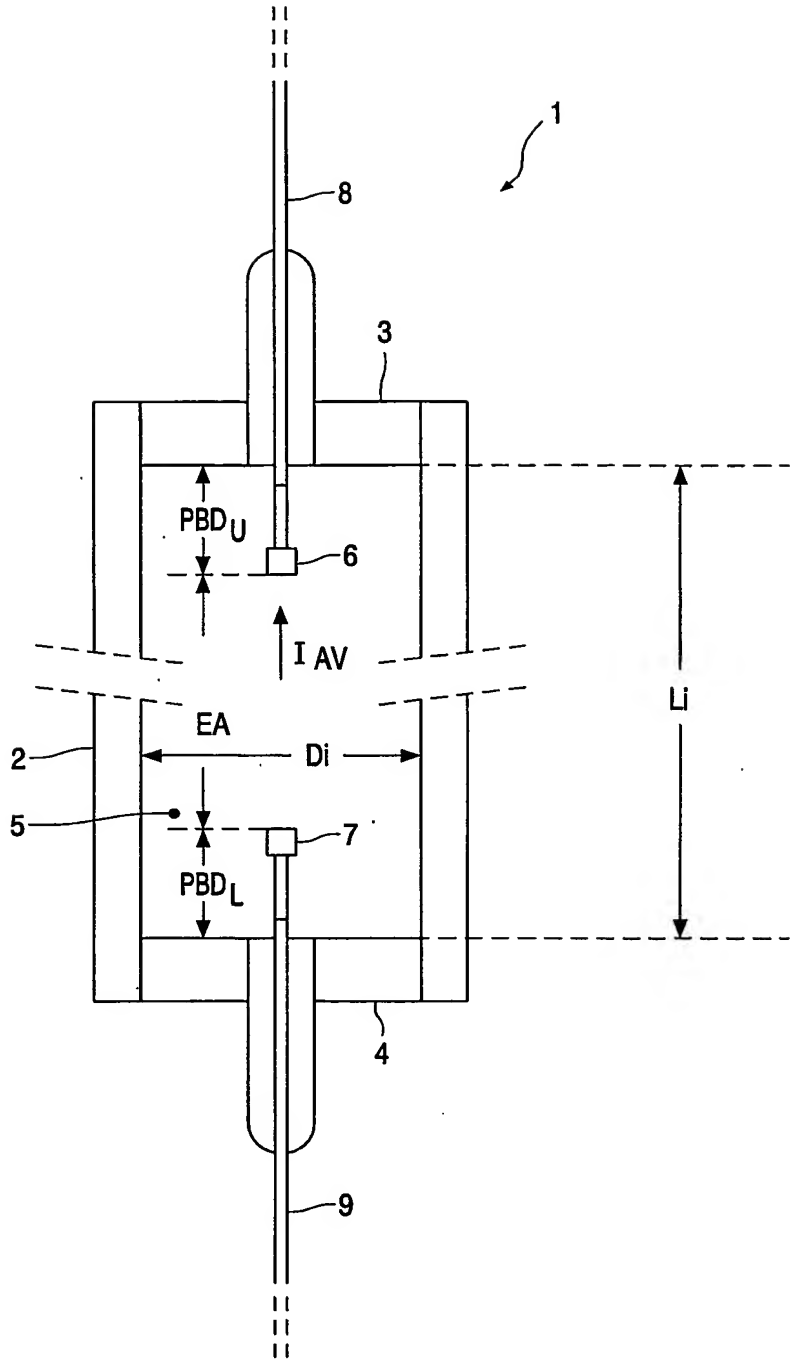

FIG. 1

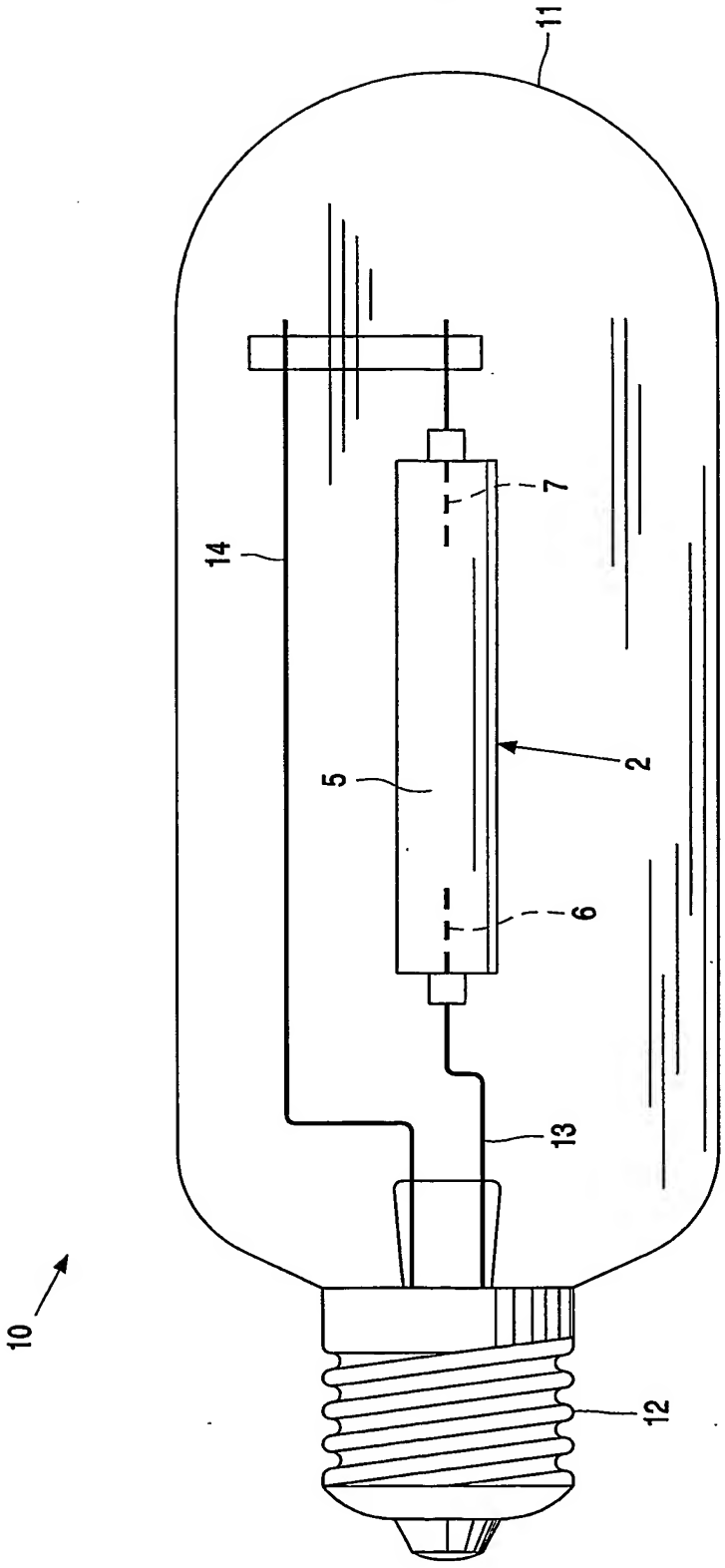

FIG. 2

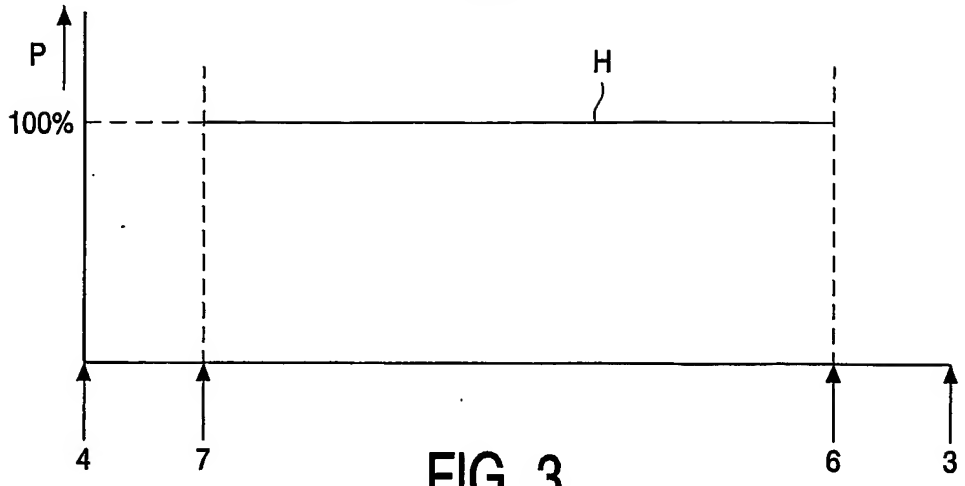

FIG. 3

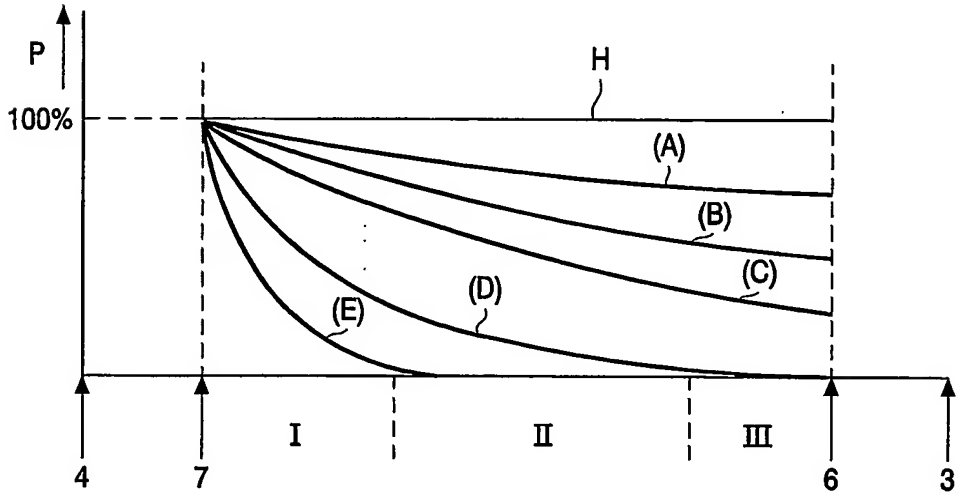

FIG. 4

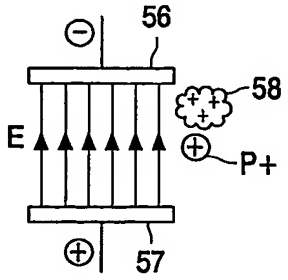

FIG. 5

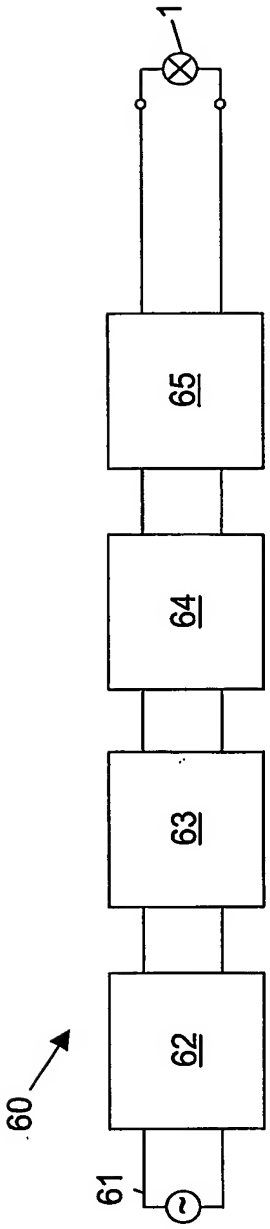

FIG.6

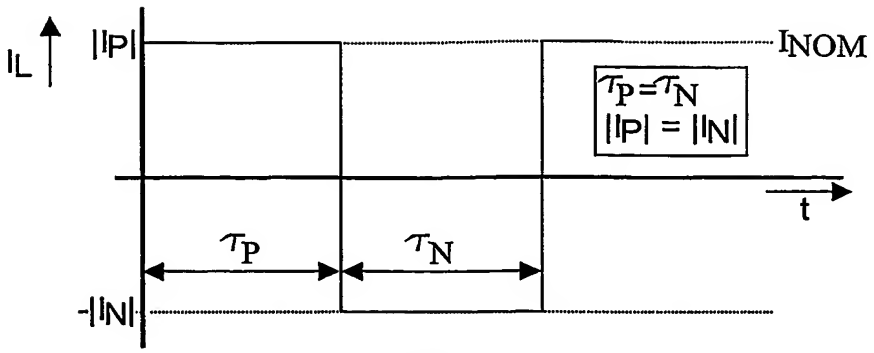

FIG.7A

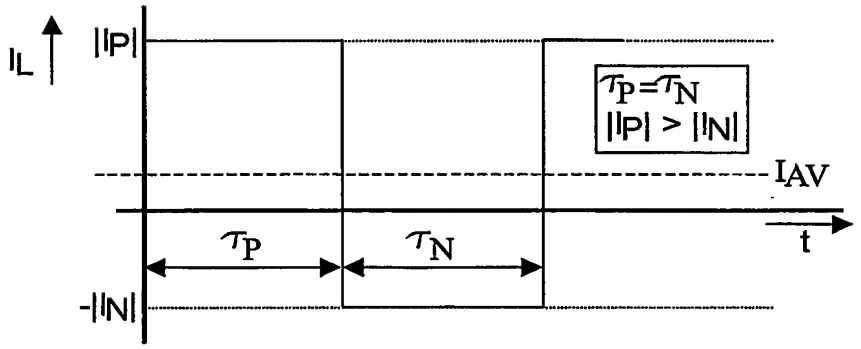

FIG.7B

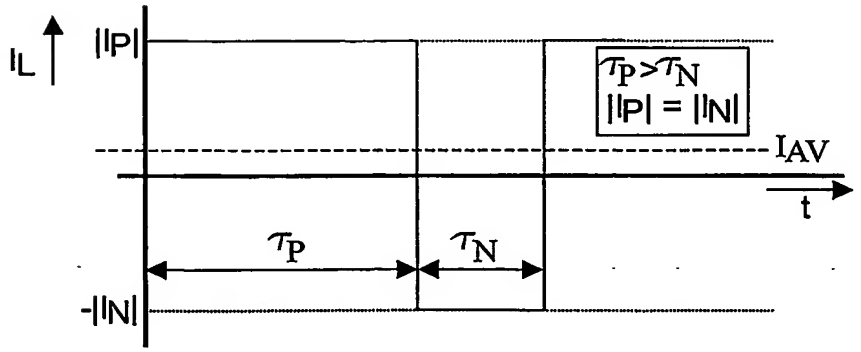

FIG.7C

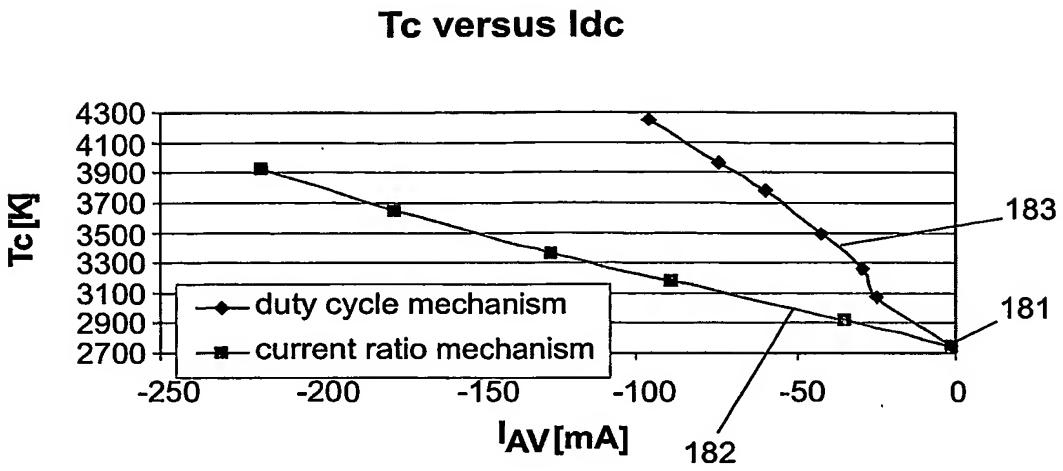
Tc versus Idc
Tc[K]
4300
4100
3900
3700
3500
3300
3100
2900
2700
duty cycle mechanism
current ratio mechanism
-250
-200
-150
-100
-50
0
IAV[mA]
183
181
182

FIG.8

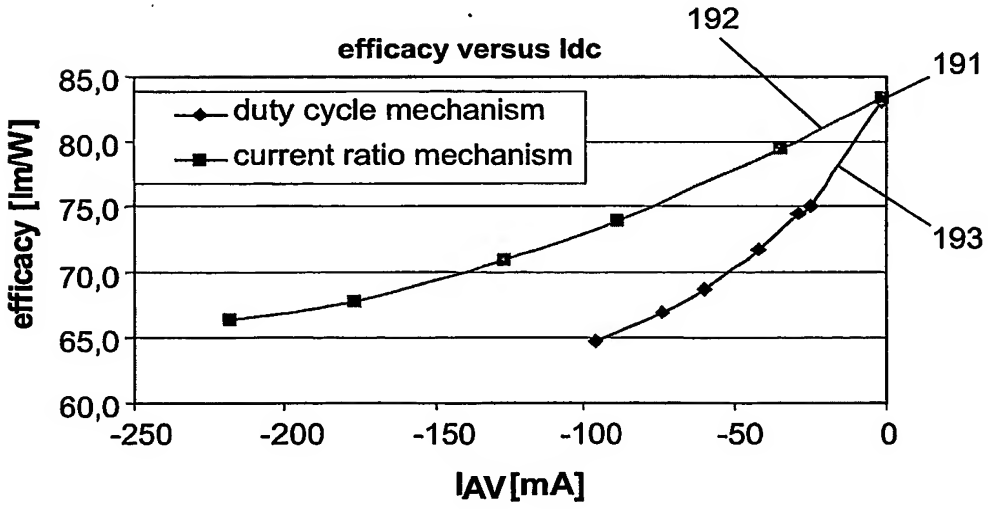
efficacy versus Idc
efficacy [lm/W]
85,0
80,0
75,0
70,0
65,0
60,0
duty cycle mechanism
current ratio mechanism
-250
-200
-150
-100
-50
0
IAV[mA]
192
191
193

FIG.9

$\tau_P < \tau_N$
$|I_P| > |I_N|$

$$I_{AV} = \frac{\tau_P \cdot |I_P| - \tau_N \cdot |I_N|}{\tau_P + \tau_N} = 0$$

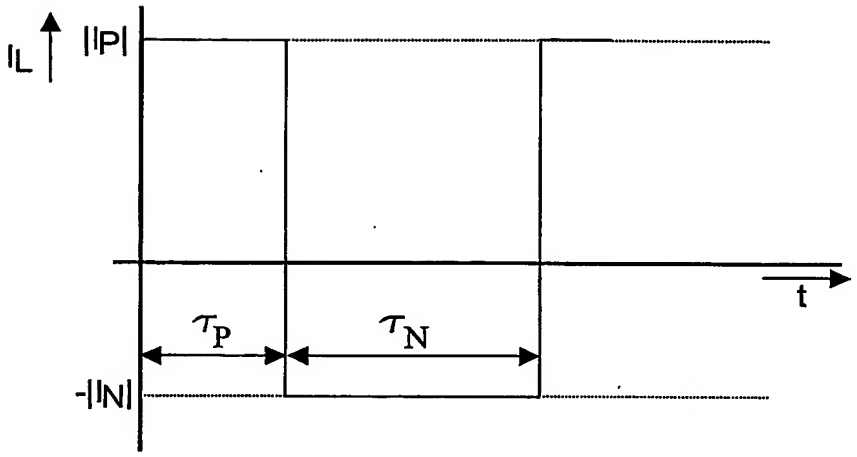

FIG.10

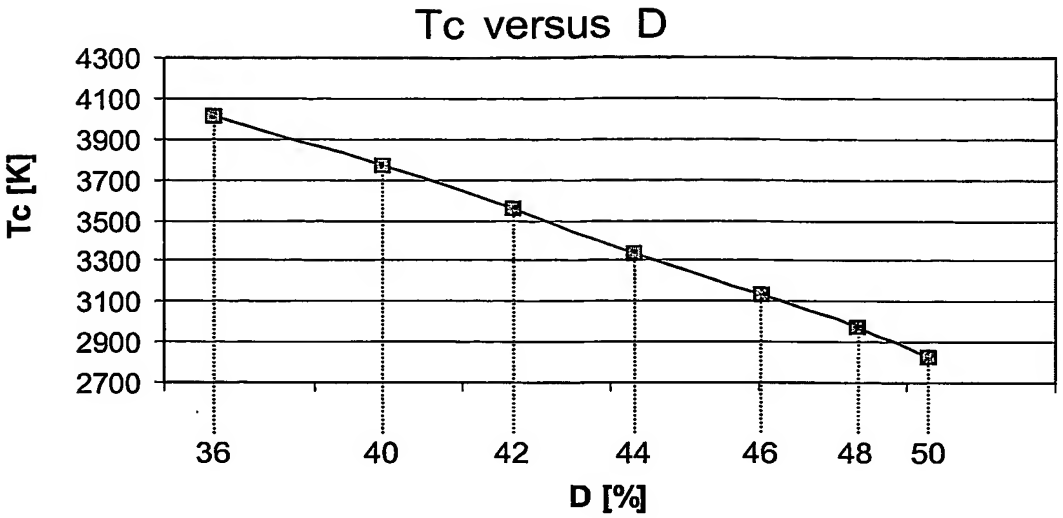
Tc versus D
Tc [K]
4300
4100
3900
3700
3500
3300
3100
2900
2700
36
40
42
44
46
48
50
D [%]

FIG.11

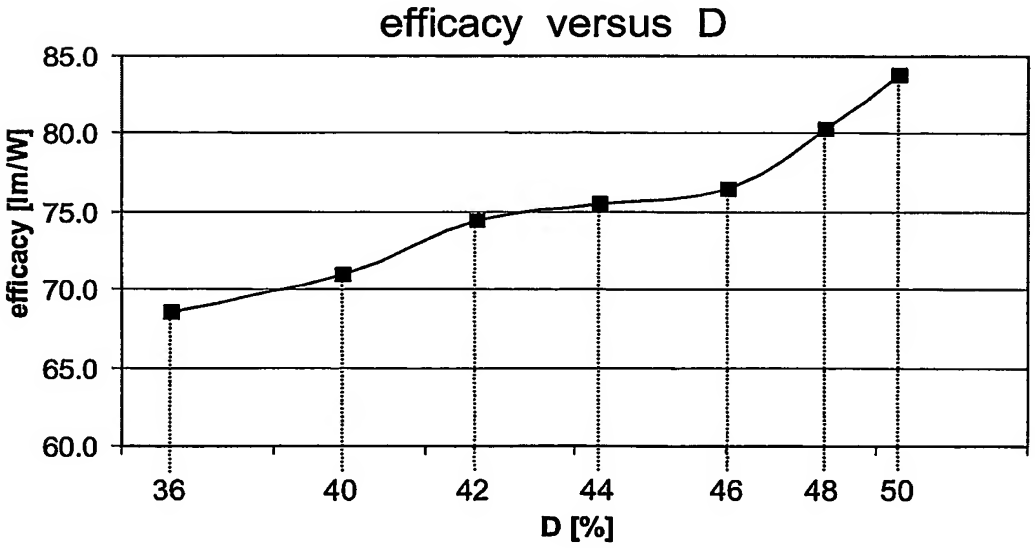
efficacy versus D
efficacy [lm/W]
85.0
80.0
75.0
70.0
65.0
60.0
36
40
42
44
46
48
50
D [%]

FIG.12

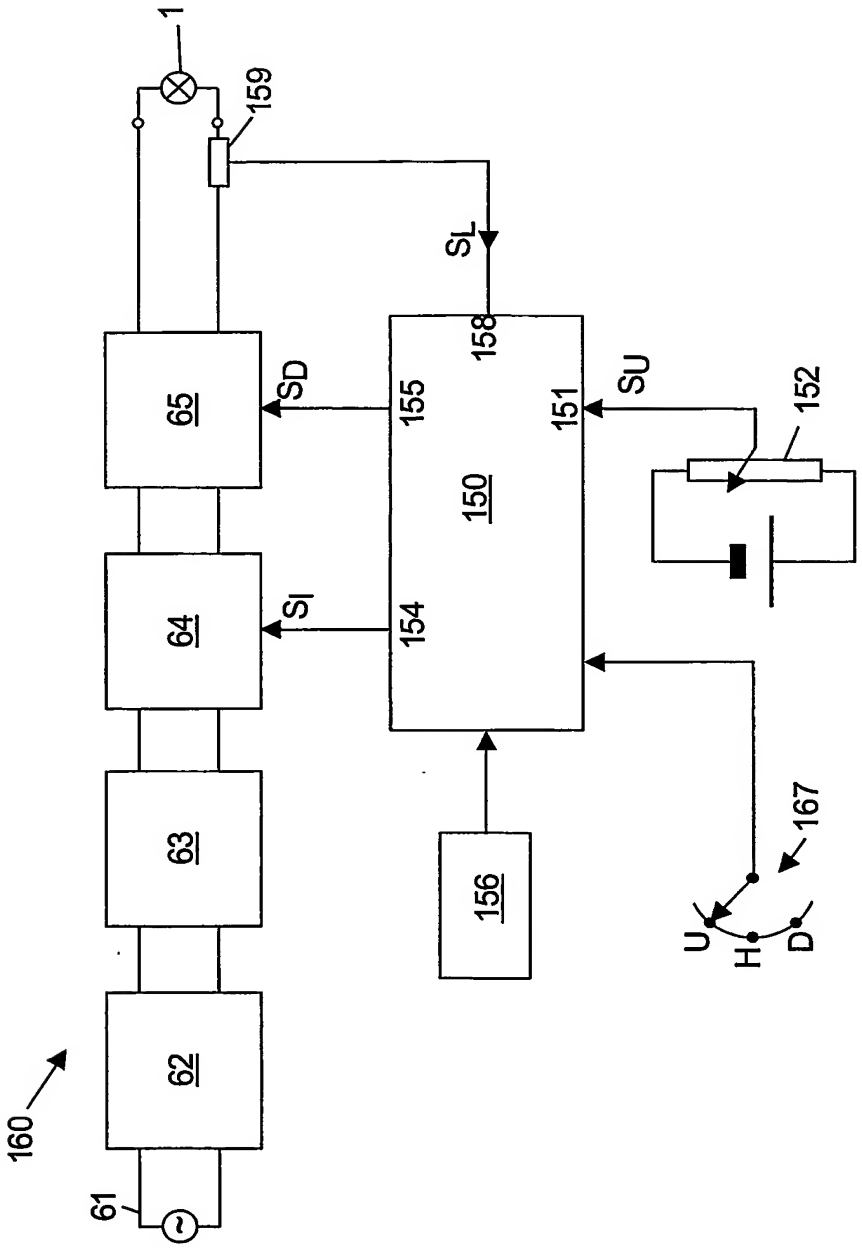
1
159
SL
158
65
SD
155
151
SU
152
150
64
SI
154
63
156
167
U
H
D
62
160
61

FIG.13